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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,841	08/06/2004	Masuhiko Natsuhara	039.0053	4840
29453	7590	01/24/2008		
Judge Patent Associates Dojima Building, 5th Floor 6-8 Nishitemma 2-Chome, Kita-ku Osaka-Shi, 530-0047 JAPAN			EXAMINER KACKAR, RAM N	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 01/24/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/710,841	Applicant(s) NATSUHARA ET AL.	
	Examiner Ram N. Kackar	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/15/2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/28/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/15/2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuda et al (JP 10237658) in view of Lubomirsky et al (US 6935466).**

Fukuda et al disclose a semiconductor processing device comprising a vertically movable pedestal, support pieces mounted to pedestal (abstract and Fig 1), a hermetic bellows seal between pedestal and chamber (32) and lift pins to load /unload substrates (27). The lift pin are disclosed attached to the process chamber floor and do not move during load/unload. The bellows are outside the chamber.

Fukuda et al do not specifically disclose the height of the lift pins 27 but it will be apparent from Fig 1 that the plurality of pins should all be of proper height to support a planer

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substrate 40. Further- although not required by the claim- the proper functioning of the stage for vertical movement requires that the susceptor and substrate be horizontal. Still further, for proper process uniformity and consistency substrate distance from chamber top surface should be same. Still further planarity and horizontality would be needed for error free load/unload also.

Lubomirsky et al disclose the requirement for alignment of lift pins and teach the method of achieving it by raising them to contact a planer surface and anchoring them while in contact so that to maintain planarity and constant and accurate spacing to top wall of the chamber (Abstract and for example Col 1 line 5 to Col 2 line27).

Therefore it would be obvious for one of ordinary skill in the art to dispose the lift pin so that the top ends of the pins lie on an imaginary plane with a planarity as perfect as possible, less than 0.5mm.

4. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as obvious over Sang-Gee Park (US Pub 2002/0174950) in view of Lubomirsky et al (US 6935466).

Sang-Gee Park discloses a semiconductor processing device comprising a vertically movable pedestal, support pieces mounted to pedestal (Fig 4), a hermetic bellows seal between pedestal and chamber (21) and lift pins to load /unload substrates (60). The lift pin are disclosed attached to the process chamber floor and do not move during load/unload. The bellows are outside the chamber. The lower end of the lift pins could be screwed to a support fixed with respect to the chamber (61 and paragraph 33).

For the same reasoning as discussed above it would be obvious for one of ordinary skill in the art to dispose the lift pin in Park so that the top ends of the pins lie on an imaginary plane with a planarity as perfect as possible, less than 0.5mm.

5. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as obvious over Benzing et al (US 5405480) in view of Lubomirsky et al (US 6935466).

Benzing discloses a semiconductor processing device comprising a vertically movable pedestal, support pieces mounted to pedestal (Fig 1), a hermetic bellows seal between pedestal and chamber (52) and lift pins to load /unload substrates (54, 56). The lift pin are disclosed fixed to the process chamber floor and do not move during load/unload.

Regarding claim 6 at least some part of the bellows are outside the chamber.

Again, for the same reasoning as discussed above it would be obvious for one of ordinary skill in the art to dispose the lift pin in Benzing et al so that the top ends of the pins lie on an imaginary plane with a planarity as perfect as possible, less than 0.5mm.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al (US 20030029568) in view of Lubomirsky et al (US 6935466).

Brown et al disclose a semiconductor processing device comprising a vertically movable pedestal, support pieces mounted to pedestal (Fig 2), a hermetic bellows seal between pedestal and chamber (252) and lift pins to load /unload substrates (290). The lift pin are disclosed resting on a structure which is fixed to the process chamber and do not move during load/unload. It is not disclosed if they are anchored to the chamber. However, since they are fixed with respect to the chamber they could obviously be anchored.

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Still again, for the same reasoning as discussed above it would be obvious for one of ordinary skill in the art to dispose the lift pin in Brown et al so that the top ends of the pins lie on an imaginary plane with a planarity as perfect as possible, less than 0.5mm.

Response to Arguments

Applicant's arguments filed 11/15/2007 have been fully considered but they are moot in view of new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Ram Kackar
Primary Examiner AU 1763